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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/194,598	11/30/1998	LOUIS DELESALLE	065691/0145	3390

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EXAMINER

KRUSE, DAVID H

ART UNIT	PAPER NUMBER
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1638

DATE MAILED: 02/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/194,598

Applicant(s)

DELESALLE ET AL

Examiner

David H Kruse

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) ☐ Other: _____

/DETAILED ACTION

1. This Office action is in response to the amendment filed 4 November 2003.
2. Claims 1-18 have been cancelled, new claims 19-36 have been entered.
3. Those rejections or objections not specifically addressed in this Office action are withdrawn in view of Applicant's amendment.
4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Objections

5. Claims 26-33 are objected to because of the following informalities: At claim 26, selecting a cell from only one fused cell would be difficult and unduly limiting, step (a) should read -- fusing chicory plant cells with cells of a second plant comprising...-- and at step (b) -- detecting the fragment in the plant cells --. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. Claim 27 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what the limitation "the plant cell" at line 1 is referring to in claim 26, whether it is referring to "a chicory plant cell" or to "a second plant cell", hence the metes and bounds of the invention are unclear.
7. Claims 19-36 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to

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one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This rejection is repeated for the reason of record as set forth in the last Office action mailed 7 May 2003. Applicant's arguments filed 4 November 2003 have been fully considered but they are not persuasive.

Applicant argues that verbatim support for 90% similarity with a 347 bp fragment of the orf 522 sequence of *Helianthus annuus* is presented throughout the specification and one skilled in the art would recognize that the claimed fragment need not be identical to the sunflower orf 522 sequence, rather the claimed fragment need only encode the same functional protein as at least a portion of the sunflower orf 522 sequence. Applicant argues that because of redundancy in the genetic code, one skilled in the art would recognize that Applicants were in possession of there cited method "wherein the nucleotide sequence comprises a 347 bp fragment of the orf 522 sequence of *Helianthus annuus* or a sequence having at least 90% similarity with the fragment (paragraph spanning pages 6-7 of the Remarks). This is not found to be persuasive because there are at least 175, 347 contiguous basepair fragments of the orf 522, of which Applicant has described only one identified using PCR primers having the nucleic acid sequences of SEQ ID NO: 1 and 2 (see page 8 of the specification). Applicant does not describe any nucleic acid sequence that is at least 90% similar to said fragment. As such Applicant only describes the nucleotide sequence in terms of function, and Applicant fails to describe a relationship between the nucleotide sequence required to practice the claimed method and the function of conferring cytoplasmic male sterility as broadly claimed.

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Applicant argues that there is a described and art-recognized correlation between the nucleotide sequence and its function (page 7, 2nd paragraph of the Remarks). This argument is not found to be persuasive because the art-recognized correlation only exists between the structure of the orf 522-nucleotide sequence and the function of conferring cytoplasmic male sterility on plants in the Asteraceae, not to 347 bp fragments of the orf 522.

8. Claims 19-36 are rejected under 35 U.S.C. § 112, first paragraph, because the specification, while being enabling for (see the suggested allowable claim below), does not reasonably provide enablement for a method comprising integrating into a genome of a chicory plant a nucleotide sequence conferring cytoplasmic male sterility, wherein the nucleotide sequence comprises any 347 bp fragment of the orf 522 sequence of *Helianthus annuus* or a sequence having at least 90% similarity with the fragment. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. This rejection is repeated for the reason of record as set forth in the last Office action mailed 7 May 2003. Applicant's arguments filed 4 November 2003 have been fully considered but they are not persuasive.

After careful consideration of Applicant's teachings, the teachings of the art, and the nature of the claimed invention the following claim would be considered allowable subject matter:

A method of producing a chicory plant that exhibits cytoplasmic male sterility comprising:

(a) introducing into a cell of a chicory plant a mitochondrion of a male sterile plant that comprises the orf 522 sequence of *Helianthus annuus*; and

(b) identifying, in the chicory plant or cell thereof, a 347 bp fragment of said orf 522 comprising the nucleotide sequences of SEQ ID NO: 1 and SEQ ID NO: 2.

Applicant argues that the limitation a sequence having at least 90% similarity with the fragment is enabled and that one skilled in the art could easily practice the claimed methods (page 7, 3rd paragraph of the Remarks). This argument is not found to be persuasive because Kohler *et al* (1991), upon whose teachings Applicant relies at page 2, 2nd paragraph of the Specification, teaches that orf 522 is integrally associated with the *atpA* gene and its transcription in CMS (cytoplasmic male sterile) plants, hence without guidance by the art or Applicant, one of skill in the art at the time of Applicant's invention would have been required to practice undue trial and error experimentation to modify the coding sequence of the orf 522 at what appears to be a critical location within the mitochondrial genome (page 375, right column of Kohler).

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR § 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR § 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. The claims are free of the prior art which neither teaches nor fairly suggests a method of producing a recombinant chicory plant that exhibits male sterility comprising the step of detecting a 347 bp fragment of the orf 522 sequence of *Helianthus annuus*.

11. No claims are allowed.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David H. Kruse, Ph.D. whose telephone number is (571) 272-0799. The examiner can normally be reached on Monday to Friday from 8:00 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Amy Nelson can be reached at (571) 272-0804. The fax telephone number for this Group is (703) 872-9306 Before Final or (703) 872-9307 After Final.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group Receptionist whose telephone number is (703) 308-0196.



David H. Kruse, Ph.D.
5 February 2004

AMY J. NELSON, PH.D.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600